STRETCHLEARN · WORKBOOK

Botanical Illustration — Workbook

This workbook turns the course into studio practice. Each section pairs with a course module and gives you exercises to draw, worksheets to record measurements and colour mixes, and checklists to keep your work accurate. Work through it specimen by specimen, and keep your filled sheets as a growing observational reference of your own.

Seeing and Measuring the Specimen

Set up a working station, choose a forgiving specimen, and practise the three measuring methods until accuracy is a habit.

Exercise: Comparative Measurement Drill

Pick one simple specimen (ivy leaf, single tulip, or rosemary sprig). Using only dividers at a fixed arm's length, choose a base unit and plot every landmark as a ratio of it before drawing any contour. Do this three times on three specimens, timing yourself, and aim to verify two key distances twice each.

• What base unit did you choose, and why was it easy to remeasure?

• Express three other features as multiples or fractions of that unit.

• Where did your second measurement disagree with your first, and by how much?

• Which of the three measuring methods (dividers, proportional dividers, grid) suited this specimen best?

Worksheet: Specimen Record Sheet

Fill one of these for every specimen before you begin drawing. It becomes the reference you rebuild colour and structure from if the plant wilts.

Date collected

Plant name (genus / species if known)

Common name

Where it grew / source

Overall height (mm)

Widest leaf width (mm)

Light direction (e.g. upper-left, 45 degrees)

Surface notes (waxy / hairy / ribbed / glossy / matte)

Base measuring unit chosen

Estimated working time before wilt

Checklist: Workstation Setup Check

[ ] Single raking light fixed at roughly 45 degrees from upper left (right-handers)
[ ] Daylight-balanced bulb (5000K to 6500K) in use
[ ] Board tilted 15 to 20 degrees so paper is viewed square-on
[ ] Specimen at same eye level and distance as the paper
[ ] Stem position marked with tape so it returns to the identical angle
[ ] Scrap sheet under drawing hand to prevent smearing
[ ] Dividers, ruler, graded pencils, and loupe within reach

Graphite Rendering of Plant Form

Build accurate line drawings, then model form with a controlled five-tone value scale and surface-specific texture.

Exercise: Five-Zone Light Study on a Single Leaf

Draw one leaf at about 8cm. Before shading, lightly label the five light zones on it: highlight, light, core shadow, reflected light, cast shadow. Render with strokes that run parallel to the midrib, matching each value to a step on a five-box scale you draw first. Reserve a true white highlight and push one accent to near-black.

• Where does the core shadow fall, and is it consistent with your fixed light direction?

• Which value step (1 to 5) matches the deepest shadow on the leaf?

• Did you keep a true white highlight, or did the range stay stuck in the greys?

• How did directional shading help the surface read as curved?

Exercise: Three-Surface Texture Comparison

Collect three leaves with clearly different surfaces (for example holly, sage, lamb's ear). Render each small (about 5cm), focusing only on surface quality, not perfect outline. Identify the highlight quality and shadow softness before rendering each.

• Describe the highlight on each: hard-edged, soft, or broken into hairs?

• How did you render a vein as a raised or sunken form rather than a drawn line?

• Which pencil grade and mark gave each texture its effect?

• Placed side by side, are the three surfaces distinguishable without labels?

Worksheet: Value and Texture Log

Record what worked for each rendering so you can repeat it. Keep these with your studies as a personal technique reference.

Specimen / part

Surface type (glossy / matte / hairy / ribbed / translucent)

Highlight quality observed

Core shadow value (step 1 to 5)

Pencil grades used (e.g. 2H, HB, 2B, 4B)

Stroke direction relative to form

Burnished? (yes / no, and tool used)

What to do differently next time

Checklist: Line Drawing Quality Check

[ ] Landmarks and central axis plotted before any contour drawn
[ ] Major masses blocked as simple geometric envelopes first
[ ] Hidden far edges drawn through, so curled forms sit in space
[ ] Overlaps resolved: clear which form is in front
[ ] Construction lines lifted with a kneaded eraser, not scrubbed
[ ] Final contour even-weight (if inking over) or varied (if graphite is final)
[ ] Proportions re-checked against fresh measurements

Watercolour and Pen-and-Ink Techniques

Mix natural greens, build form with transparent layered washes, and render tone in ink with stipple and hatch.

Exercise: Green Mixing Chart from Three Pigments

Using only a warm yellow, a cool blue, and one earth (for example Winsor lemon, phthalo or ultramarine blue, and quinacridone gold), mix and swatch a row of greens: bright spring growth, mature foliage, cool shadow green, and warm sunlit green. Label the pigments and proportions under each swatch. Never use a tube green straight or black to darken.

• Which mix gave the most convincing mature-foliage green?

• How did adding ultramarine shift a green toward the shadow side?

• How did quinacridone gold warm a green toward the light?

• What did you use to darken green instead of black, and how did it read?

Exercise: Stipple-Tone Gradient Strip

With a technical pen (for example a Micron 01) held perpendicular, stipple a strip that grades from white paper to solid dark across about 8cm, changing only dot density, not dot size. Then stipple a small leaf, building the whole form up together and leaving the highlight as clean paper.

• Did your gradient stay smooth, or did density jumps create banding?

• How did you keep dots round and uniform?

• Where did you leave the highlight, and did you protect it throughout?

• Compare this to a cross-hatched version: which felt faster, which smoother?

Worksheet: Colour Mix Recipe Card

Fill one card per colour you mix for a plate, so the painting can be reproduced or continued later. Attach a physical swatch beside each.

Target colour / where used on the plate

Pigment 1 (name)

Pigment 2 (name)

Pigment 3 / modifier (name)

Approximate proportions

Dilution (pale wash / mid / saturated)

Swatch (paint a sample here)

Notes (granulating? lifts easily? stains?)

Checklist: Wash and Ink Discipline Check

[ ] Highlights planned and reserved as bare paper before painting
[ ] Each watercolour layer left to dry fully before the next glaze
[ ] Each mix limited to two or three pigments to avoid mud
[ ] Working light-to-dark and large-washes-to-small-details
[ ] Ink is waterproof, lightfast, and pigment-based
[ ] Pen tested on the same final paper before committing
[ ] Graphite underdrawing erased only after ink is fully dry
[ ] Stopped before lights went grey or overworked

Botanical Accuracy and the Finished Plate

Read a plant's diagnostic features, dissect and depict the flower correctly, then compose and finish an annotated plate.

Exercise: Diagnostic Feature Audit

For one flowering specimen, work through its diagnostic features and record each accurately: leaf shape, margin, venation, phyllotaxy. Then count the floral parts. Draw the phyllotaxy as observed, including foreshortened leaves, even if the real pattern is less tidy than you would design.

• Is the leaf venation pinnate, palmate, or parallel?

• Is the phyllotaxy alternate, opposite, or whorled? How many leaves per node?

• How many sepals, petals, and stamens did you count?

• Did you draw the arrangement as observed, or were you tempted to idealize it?

Worksheet: Flower Dissection Worksheet

Use a spare flower for dissection under a loupe. Record counts and arrangement before reassembling your understanding into the whole-flower drawing. Note magnification for any enlarged detail.

Specimen name

Number of sepals (calyx)

Number of petals (corolla)

Number of stamens / anther position

Pistil parts observed (stigma / style / ovary)

Ovule arrangement (from a lengthwise slice)

Views to include (front / side / rear / dissection)

Magnification of enlarged detail (e.g. x4) or scale bar length

Exercise: Plate Composition Thumbnail

Before the final plate, sketch two or three small thumbnail layouts placing a life-size habit drawing as the central element with enlarged flower views and a dissection in the surrounding space. Choose the layout with the best balance and eye-flow.

• Where did you place the main specimen, and how much breathing room did you leave?

• How is the foliage mass balanced against the smaller detail studies?

• Does the stem's line lead the eye through the composition?

• Which element risks touching or being cut off at the edge, and how did you fix it?

Checklist: Finished Plate Sign-Off

[ ] Diagnostic features (venation, margin, phyllotaxy, floral parts) verified against the specimen
[ ] Any idealization improves legibility only and changes no botany
[ ] Scientific binomial (italic) and common name added in clean, small lettering
[ ] Enlarged details labelled with magnification or a scale bar
[ ] Negative space deliberate; nothing crowds or cuts the edge awkwardly
[ ] Plate signed and dated discreetly in a lower corner
[ ] Final accuracy pass done against the living specimen
[ ] Stored flat, out of direct light, interleaved with acid-free tissue or glassine

Your Action Plan

1. Assemble the starter kit: graded pencils, hot-pressed paper, dividers, a small artist-grade watercolour set, a Micron pen set, and a 10x loupe.
2. Set up a fixed raking-light workstation and complete the Workstation Setup Check.
3. Choose one forgiving specimen, condition it for vase life, and fill a Specimen Record Sheet.
4. Run the Comparative Measurement Drill until you can plot a plant proportionally from a single base unit.
5. Make an accurate line drawing, then a five-zone graphite value study with a true white and a near-black.
6. Complete the Three-Surface Texture Comparison and log what worked on a Value and Texture Log.
7. Build a green-mixing chart from three pigments and record each mix on Colour Mix Recipe Cards.
8. Practise a stipple gradient and a stippled leaf, then ink a clean line-and-wash study.
9. Dissect one flower, complete the Flower Dissection Worksheet, and draw it from front, side, and detail views.
10. Compose and finish one annotated single-specimen plate, then complete the Finished Plate Sign-Off.